



National Aeronautics and Space Administration
John F. Kennedy Space Center, Florida
Expendable Launch Vehicles Launch Services Project

**Expendable Launch Vehicle (ELV)
Launch Services Project
Risk Management Plan
K-ELV-12.2 Basic**

Prepared by: original signed by
Joseph Lackovich
Deputy Director, ELV Launch Services

Date: 11/9/00

Approved by: original signed by
Michael Benik
Director, ELV Launch Services

Date: 11/9/00

Concurrence: original signed by S. Francois for
Bobby G. Bruckner
Manager, ELV and Payload Carriers Programs Office

Date: 11/9/00

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References and Applicable Documents

1. *Continuous Risk Management Guidebook*, Carnegie Mellon University, Software Engineering Institute, 1996
2. NASA Continuous Risk Management Course (February 1998)
3. NPG 7120.5A - *NASA Program and Project Management Processes and Requirements*
4. ELV Program Risk Management Plan

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1.0 INTRODUCTION

1.1 PURPOSE

The purpose of this Risk Management Plan is to provide guidelines for and to document the risk management process for the Expendable Launch Vehicle (ELV) Launch Services Project. The ELV Launch Services Project is implemented at Kennedy Space Center (KSC) by the ELV Launch Services Directorate, described in Figure 1, along with other NASA centers, launch service providers, and mission support contractors. The continuous risk management process, as defined in this plan, is applied as a means to anticipate, mitigate, and control risks, and to focus project resources where they are needed to ensure success. Risk Management practices for ELV Launch Services Project have been and will continue to be incorporated into the existing processes and meetings.

1.2 DEFINITIONS

Project Risk: A *project risk* is a potential problem that would be detrimental to the project's success should it materialize. The major components of risk are the probability that something undesirable might happen and the resulting consequences if the undesired event should occur. For example, the project might overrun the schedule, resulting in delayed delivery of the product; exceed its budget, which would result in a cost overrun; or deliver an unsuitable product, which would result in customer and user dissatisfaction. Risk is present in some form or degree in most human activities.

Project risk is characterized by the following:

- Uncertainty is involved ($0 < \text{probability} < 1$).
- A loss is associated with it (life, money, property, reputation, and so forth).
- It is manageable - in the sense that human action can be applied to change its form or degree.

Risk Exposure: *Risk exposure* is the product of probability and impact. The impact describes the effect on the project and mission if the risk occurs and is not eliminated or mitigated. The probability is the likelihood the risk will occur.

Risk Ownership: *Risk Owners* are responsible for identifying, analyzing, reporting (in the risk management database), updating (mission charts), and mitigating all risk items in the owners' areas. Four areas of risk "ownership" are defined as:

- *Mission Risk:* the MIM is ultimately responsible for all mission risk (technical, cost, and schedule) supported by the MIT: IE-Tech, LSIM-Ground Ops Support, LSM-Financial & Contracts.
- *Fleet/Project Engineering Risk:* The Vehicle Systems Lead/Project Engineer is ultimately responsible for fleet or engineering project risk.
- *Project Management Risk:* The project management structure (Director/Div/Branch Chiefs) is ultimately responsible for all project risk, including administrative risk.
- *Safety:* S&FA is ultimately responsible for all safety & flight assurance risk.

Problem: A *problem* is a risk that has materialized or inevitably will. Sometimes a situation perceived to be a risk may, in fact, be a problem. The process for handling problems is not within the scope of this plan.

When dealing with risk in this general sense, it is not always easy to distinguish between single events, multiple events, continuous events, and interdependent events, or between cause and effect. In considering an undertaking, many risks may be identified. Systematic risk management requires that

initial apprehensions be turned into specific root causes, and that the probabilities and potential losses be established. The specific outcome to be avoided must be explicitly stated in order to identify possible courses of action for risk reduction.

Urgency: *Urgency* is an important mitigation consideration for any risk. Urgency is determined by two dates:

- The date on which risk mitigation activities must be complete, and
- The date mitigation activities must begin.

The mitigation complete date is the date on which the risk's impacts may occur if no action is taken. It is normally the date of a specific event and easily identifiable by the author of a Risk Information Sheet. The mitigation start date is the date on which mitigation efforts must begin in order to complete all activities required to mitigate the risk. The mitigation start date is driven by the mitigation complete date and all the activities required by the mitigation process. The mitigation start date, in turn, drives the management decision process and the requirements for availability of resources. The mitigation start date may not be readily available to the author of a Risk Information Sheet, and may be added after analysis is complete.

The ELV Launch Services Project does not assign ratings to urgency, but rather documents the two germane dates. This approach allows urgency to be evaluated and responded to differently from the various perspectives of those involved in the mitigation process.

1.3 SCOPE

This plan is prepared per the requirements and guidelines of NPG 7120.5A, NASA Program and Project Management Processes and Requirements, and is applicable across all functions and supporting organizations of the NASA ELV Launch Services Directorate.

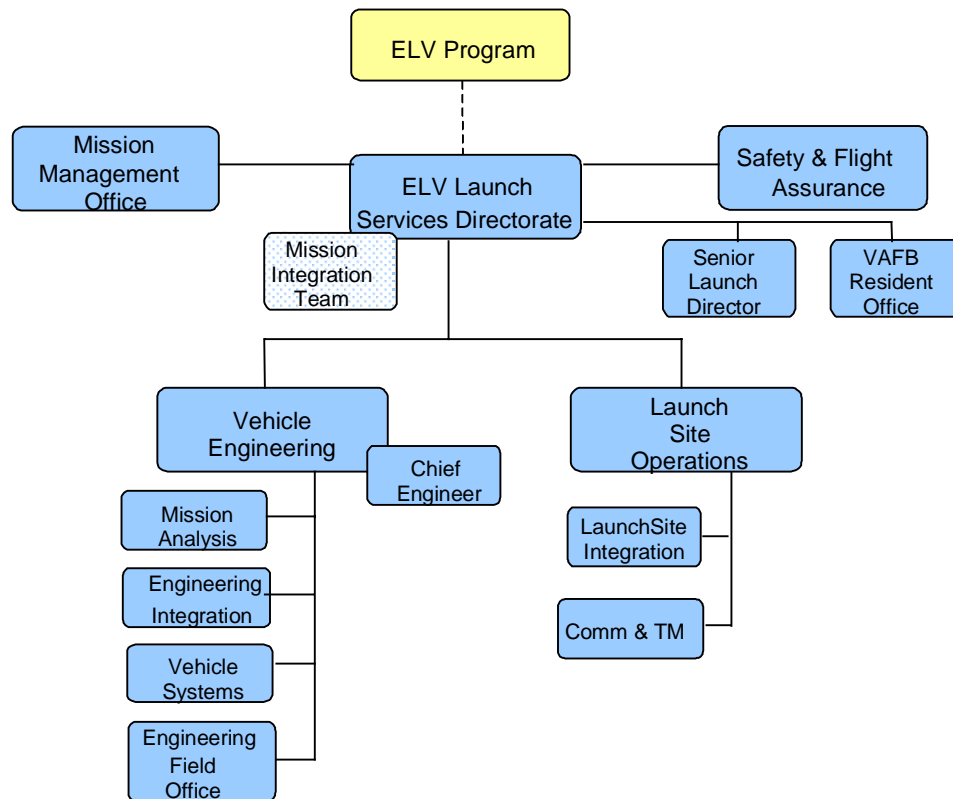


Figure 1 - KSC ELV Launch Services Directorate

1.3.1 Interfaces to the ELV Program

1.3.1.1 Risk Elevation to Program

When resources to mitigate the risk are beyond the scope of the existing ELV Project resources, changes to contracts (Launch Service Provider or Mission Support Contractor) are required, significant involvement by personnel external to the ELV Project (e.g. outside expertise) is required, or schedule relief is required, then the ELV Launch Services Director will elevate the risk to the ELV Program at a PRCB in accordance with the ELV Program Risk Management Plan, see Reference 4.

1.3.1.2 Risk Status to Program

The ELV Project will present the status of Program level risks, risks that have become problems, and other risks of interest to the Program in the following forums:

- Program/Project Integration Meetings
- Project Reviews
- Project Risk Reviews
- Called meetings for purposes of discussing specific risks.

2.0 CONTINUOUS RISK MANAGEMENT

2.1 CONTINUOUS RISK MANAGEMENT OVERVIEW

The risk management process is designed to ensure the early identification of potential problems, enable more efficient use of resources, address these risks, promote teamwork by involving personnel at all levels of the project, provide information for risk management decision-making, and increase the chances of project success. The methodology to continually track progress, especially in areas where identified risks are present, is essential for effective risk management. Implementation of the continuous risk management approach provides a disciplined environment for proactive decision-making needed to continually assess what could go wrong (risks), prioritize risks by project or mission impact and urgency, define and implement strategies to deal with those risks, and measure the effectiveness of the implemented strategies.

The six primary activities of the continuous risk management process are identification, analysis, planning, tracking, controlling, and communication. These activities and the methods of implementation are further defined in the following sections.

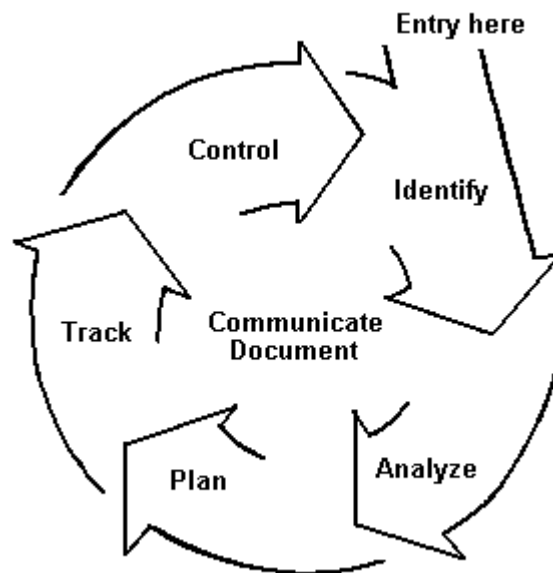


Figure 2 - Risk Management Paradigm

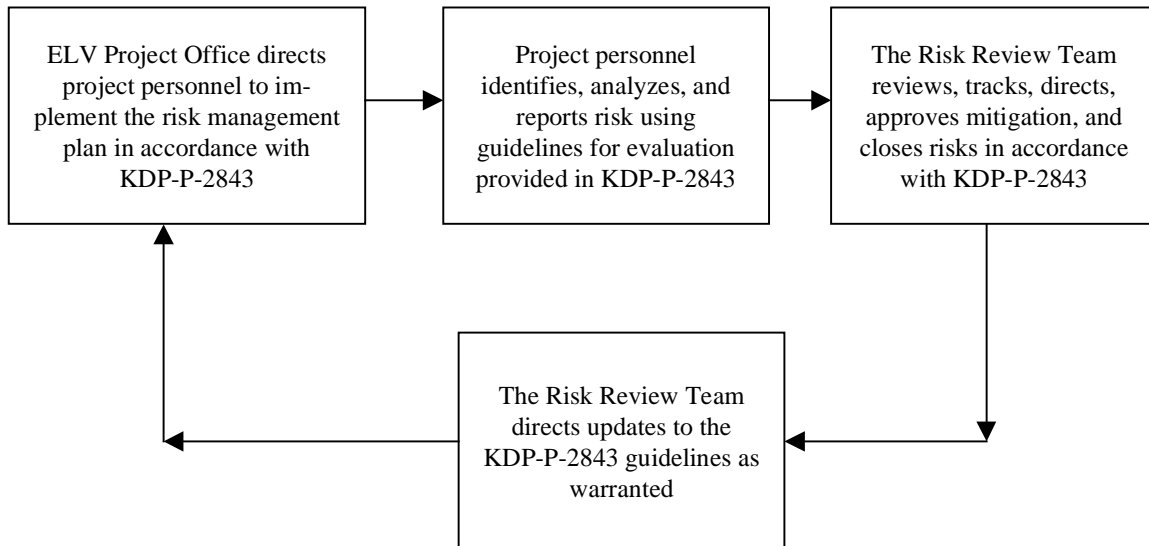
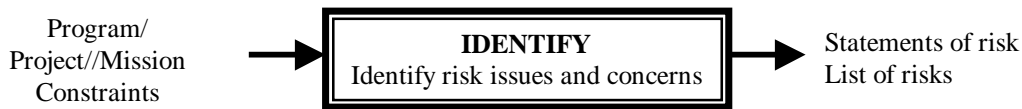


Figure 3 - ELV Project Level Process for Continuous Risk Management

2.2.1 IDENTIFYING RISKS



2.2.1.1 PURPOSE

The purpose of identifying risks is to search for and locate risks early enough to effectively manage them before they become problems.

2.2.1.2 DESCRIPTION

Risk identification is an organized, thorough approach to seeking out the real risks associated with the ELV Launch Services Project. Care should be taken to distinguish between problems and risks. The risk statement must identify a condition and a consequence. The condition is a single phrase or sentence that briefly describes the key circumstances or situations that have caused concern, doubt, anxiety, or uncertainty. The consequence is a single phrase or sentence that describes the key, negative potential outcome(s) of the current condition.

Given the condition there is a possibility that consequence(s) will occur.

Additional information on the condition or consequence of the risk is provided as context. The context should be articulated and recorded so project personnel understand the uncertainties.

The impact and probability of the consequence will be determined in the analysis process.

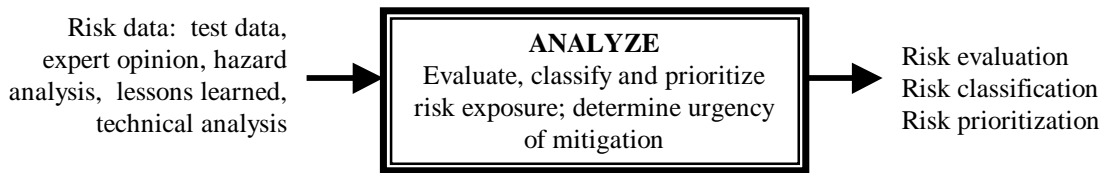
2.2.1.3 TOOLS AND PROCESSES

Risks are identified by individuals or teams across all levels of the functional and administrative organizations, including engineering, mission and launch site integration, program integration, procurement, safety and flight assurance, financial analysis, administrative support, and management. The risk issues and concerns, captured on Risk Information Sheets (RIS), as shown in Appendix A-1, are maintained in a risk management system database.

Once a risk has been identified and a risk owner assigned, it becomes the responsibility of the risk owner (team lead or designated person assigned to mitigate the risk) to coordinate the analysis of the risk as described in Section 2.2.2, Analyzing Risks.

An optional tool has been developed specifically for the ELV Project that may be used to assist in identifying and analyzing risks. This tool is a set of matrices, providing a list of potential risk scenarios that may be encountered, and their level of likelihood and impact as they relate to the scenario. The Impact matrices and the Likelihood matrices are contained in KDP-P-2843. As users encounter situations not already covered by the matrices, the matrices will be updated to include these new situations.

2.2.2 ANALYZING RISKS



2.2.2.1 PURPOSE

The purpose of analyzing risks is to ascertain, classify and prioritize the ELV Launch Services Project's risk exposure.

2.2.2.2 DESCRIPTION

Analysis is the process of examining the risks in detail to determine, classify and prioritize the project's risk exposure as defined by Figure 3, and to determine the timeframe and urgency for mitigation.

The results of the analysis are subsequently recorded on the RIS by the person (or team) assigned to mitigate the risk.

Risk classification is performed by an individual or a team in order to more effectively manage a set of risks. It is based on how the risks relate to each other within a given scenario. This includes grouping risks based on shared characteristics or identifying relationships among the risks. Classification also contributes to the efficiency of sorting through large amounts of data, and allows for prioritizing risks.

Risk prioritization determines which risks should be dealt with first, and the recommended priority of allocating resources. The prioritization is based on the criteria for what is most important and urgent to ELV Launch Services Project processes, as defined in Figure 3, Risk Analysis Criteria.

2.2.2.3 TOOLS AND PROCESSES

It will be the responsibility of the risk owner (individual or team) to determine a risk's relationship (if any) to other risks identified within the ELV Launch Services Project processes. Risks that relate directly with one another may be placed into a risk set and analyzed as part of that group.

Each individual risk or group of risks is evaluated to determine impact, probability of occurrence (probability), and timeframe. The factors to be used in this evaluation are shown in Figure 3, Risk Analysis Criteria.

	Low	Medium	High
Risk Factor			
Schedule Impact	Any schedule impact not otherwise noted	Consistently impact critical launch readiness milestones or critical integration milestones	Impact launch date/window
Cost Impact (if risk is not mitigated) *	Mission unique budget impact less than 5%; Or cost impact <=\$250K	Mission unique budget impact from 5% to 25%; Or cost impact > \$250K but < \$1M	Mission unique budget impact greater than 25%; Or cost impact >=\$1M
Technical Impact	<ul style="list-style-type: none"> • Informal customer complaint • Acceptable loss of program capability 	<ul style="list-style-type: none"> • Formal customer complaint • Degraded program capability • Minor mission degradation 	<ul style="list-style-type: none"> • Loss of customer • Loss of program capability • Loss of mission or significant mission degradation
Personnel Safety Impact **	Minor injury with no lost time	Lost time accident/injury	Death or permanently disabling injury

	Low	Medium	Significant	High	Problem
Probability of Occurrence	1-9%	10-40%	41-90%	91-99%	100%

* Cost impacts beyond the scope of the ELV Project's responsibilities will be elevated to the ELV Program for decisions on risk mitigation

** Personnel Safety rated as Medium will always result in a minimum of a yellow rating

Figure 3 - ELV Launch Services Project Risk Analysis Criteria

Based upon the assessment of impact and probability, the risk is assigned a color code that relates to its seriousness. This code is automatically recorded on the RIS by the risk database system. In the criteria for "Impact," the color code selected is that rating which is the highest within the sub-criteria of schedule, cost, performance, and safety.

The timeframe to start and complete risk mitigation is an indicator of urgency, and is used to prioritize the list of risks. The translation is in Figure 5, ELV Risk Exposure.

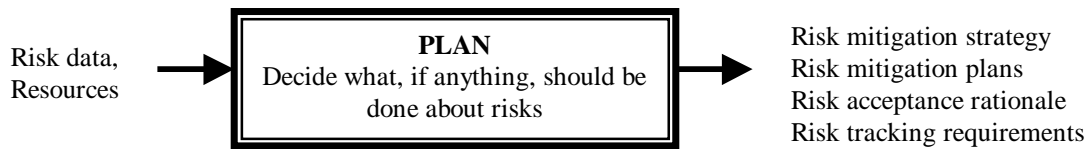
Likelihood of occurrence	High	Y	R	R
	Sgnfcnt	Y	Y	R
	Medium	G	Y	Y
	Low	G	G	Y
		Low	Medium	High
		Impact of Risk		

Figure 5 - ELV Risk Exposure

Risks are prioritized according to their exposure (the impact of the risk and the probability of its occurrence), and then by its urgency (timeframe to start and complete mitigation). Only the risks that have been identified as red or yellow are elevated to the ELV Project Manager for further management attention and prioritization and control decisions. Methods of control are discussed in Section 2.2.5, Controlling Risks.

Based on the level of risk identified through the analysis process and the assessment by the risk owner, a plan is formulated for risk mitigation.

2.2.3 RISK PLANNING



2.2.3.1 PURPOSE

The purpose of planning is to convert risk analysis data into decision-making information and actions, with the intent of implementation.

2.2.3.2 DESCRIPTION

Planning is the process of deciding what, if anything, should be done to eliminate or mitigate a risk or set of related risks. Planning determines responsibility, level of approach, appropriate actions, and resources required to mitigate the risk.

2.2.3.3 TOOLS AND PROCESSES

New risks are identified and brought to a team lead's or manager's attention through periodic project and team meetings, through weekly database reports created by the Risk Management Coordinator and during quarterly database reviews held by the Risk Management Coordinator. The team leads and managers determine whether to keep the risk or transfer accountability. The ELV Project Manager, if necessary, may transfer a risk to an external organization best suited to handle the risk.

Each red or yellow risk is assigned to a responsible individual or team for risk mitigation and status. During risk planning, the person or team responsible for mitigating the risk must determine and present to ELV Project management the extent of the planning needed to draft and finalize the mitigation plan.

For ELV Launch Services Project, a risk is determined to be acceptable if the analysis shows it has both a low impact and a low probability of occurrence. For an accepted risk, rationale for the acceptance should be recorded on the RIS. After a risk is accepted, no further action on this risk is required in the formal risk management system. The risk will remain in the risk management database for historical and statistical analysis purposes. Following closure, these risks are statused at the Quarterly Risk Review.

For risks that are determined through analysis to be red, a full mitigation plan must be developed and presented to ELV Launch Services Project management. Key elements that are addressed by a mitigation plan include the risk identifier number and risk statement, the mitigation strategy, including goals and objectives of the task plan, the success/closure criteria, personnel assignments and responsibilities, related risks (if any), due dates and schedules, specific actions that will be taken by designated assignees, cost of the strategy/actions (if applicable), requirements for tracking the risk, and a contingency strategy and threshold for requiring initiation. For mitigation plans requiring significant resources, approval is required by the ELV Launch Services Project management.

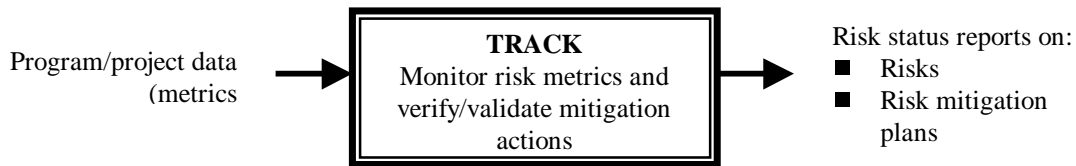
When analysis shows that risks are green (other than "accepted" risks) or yellow, the responsible person or team shall determine the appropriate level of planning based on their assessment. These risks may be monitored, have an action item list, or have a full mitigation plan developed. An action item list should

include, at a minimum, the risk identifier number, risk statement, mitigation goals and success measures, action description list, original due date, current due date, and a status.

A risk is monitored if the risk analysis shows that the situation does not currently warrant action, but could in the future. For a monitored risk, a threshold may be identified which, if encountered, would require reassessment of the risk. The threshold should be specific identified measures or an identified change point.

The progress of the risk mitigation will be followed through the tracking process, as described in Section 2.2.4, Tracking Risks.

2.2.4 TRACKING RISKS



2.2.4.1 PURPOSE

The purpose of risk tracking is to collect accurate, timely, and relevant risk information in a clear and easily understood manner appropriate to the person/team receiving the status report. The status report is used during the control process to make decisions on managing the risks.

2.2.4.2 DESCRIPTION

Risk tracking is the process in which risk data are acquired, compiled, and reported by the person or team assigned to monitoring risks.

Tracking information and reports can include quantitative indicator data as well as more subjective information. This information will be integrated with existing ELV Launch Services Project management processes.

2.2.4.3 TOOLS AND PROCESSES

Status of the risk mitigation plan is kept in the RIS status block.

A combination of the risk tracking database and stoplight chart is used to acquire, compile, and report data on the risks and applicable mitigation plans. The risk tracking database is a listing of the risks and key data from the corresponding RIS. The stoplight charts provide additional information on the status of the risk mitigation actions. This combined information can provide the decision-maker with an overview of how well current mitigation efforts are progressing and if additional management action is required.

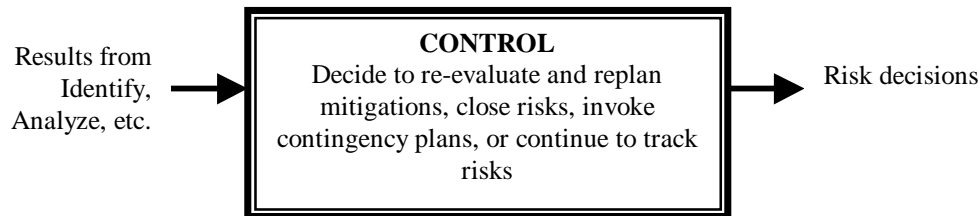
Additional risk management status reports are developed for various established and agreed upon indicators, triggers, and measures. Indicators are representations of measurement data that provide insight into a process or show status of the management of a risk. Triggers define thresholds for the indicators and specify when a mitigation action must take place. Measures reflect the characteristic of a risk and define a standard way of measuring some attribute of a risk.

The risks are tracked at the mission integration team (MIT), branch (core vehicle, fleet, and administrative), and ELV Launch Services Project management levels. The risk tracking spreadsheets and stoplight charts are applicable at all levels. The indicators, triggers, and measures are dependent on the management level. For example, at the mission level, an indicator may provide insight on the mission activity, such as schedule slack. The trigger could then be based on a minimum allowable number of days of schedule slack and the measure could describe the impact of losing the slack.

At the project management level, reports show status for the project's overall risk management process. This data can be quantitative or qualitative. Examples of indicators used at the project level include the number of high (red), medium (yellow), and low (green) priority risks, the amount of time required to close a risk, the types of mitigation processes adopted, the time to get a mitigation strategy started, the number of open and closed risks, the number of problems that result from unresolved risks, the number of recurring similar risks, and the number of risks that have a classification change from the original classification. These measurements are also used to evaluate and improve the ELV Project risk management process, including the ELV Project risk analysis criteria, shown in Figure 3.

The tracking tools will be used during the control process, addressed in Section 2.2.5, Controlling Risks.

2.2.5 CONTROLLING RISKS



2.2.5.1 PURPOSE

The purpose of controlling risks is to make informed, timely, and effective decisions regarding risks and their mitigation plans.

2.2.5.2 DESCRIPTION

The key step to risk control is to analyze tracking data, decide on how to proceed, and execute risk control decisions. Changes to risks, the transformation of risks to problems, or plans that are not mitigating the risks will require adjustments in risk mitigation plans, actions, or techniques.

2.2.5.3 TOOLS AND PROCESSES

Decisions are made by ELV Launch Services Project Management at the Risk Reviews to close risks, continue research, mitigate or watch risks, re-plan or re-focus actions or activities, or invoke contingency plans. During the Risk Review, a designated Risk Review Team will review all new risks, and authorize and allocate resources toward risk mitigation. The Risk Review Team consists of the Director, ELV Launch Services (Chairman); Chief, Launch Site Operations Division; Chief, Mission Management Office; Chief, Safety & Flight Assurance; Chief, Vehicle Engineering Division; ELV Launch Director; ELV Launch Services Knowledge Manager; the Boeing ELV Senior Manager; and the Risk Management Coordinator (non-voting member). Additionally, forums such as the Mission Integration Team, Branch Staff, ELV Project Staff, and Engineering Review Board meetings will be used to review and discuss risks associated with their respective responsibilities. These groups will be provided weekly summaries generated from the ELV Risk Management database. The Risk Review Team is responsible for closure of all red risks. Closure of green and yellow risks is delegated to the Risk Owners as defined in section 2.2.2.3. The Risk Review Team normally will not delegate that responsibility for red risks. To close a risk, the success/closure criteria identified in the risk mitigation plan must be met.

Additionally, an ELV Risk Management Coordinator is responsible for ensuring the appropriate risk process controls are followed. This individual is in charge of managing the ELV Risk Management Database, preparing the reports for each group/forum, monitoring timely risk closure, reporting metrics on the overall risk process, and continuously improving the risk management process.

2.2.6 COMMUNICATING AND DOCUMENTING RISKS

2.2.6.1 PURPOSE

The purpose of risk communication is to provide information and feedback internal and external to the project on the risk activities, current risks, and emerging risks. The communication is both formal and informal, and open communication is encouraged by management.

2.2.6.2 DESCRIPTION

Risk communication is the process in which risk information is conveyed between all levels of the ELV Project team. Members of the team are empowered to openly share issues and concerns. The process allows all ELV personnel to understand the importance of proactive risk identification and the mitigation alternatives to prevent or control these risks before they become problems.

The following existing forums are used within the ELV Launch Services Project to communicate risks:

Forum	Subjects	Risk Management Actions
ELV Project Review	Overall launch manifest, ELV calendar, ELV Missions, facility occupancy, core vehicle engineering issues, advanced mission work	Present summary stoplight chart Present status of red/yellow risks Identify new risks Present summary of mission/core vehicle on each mission chart (weekly/monthly)
ELV Project Decision Meeting	Presentations for specific technical and administrative topics that require Project level decisions to be made	Identify new risks
ELV Project & Branch Staff Meetings	Administrative issues, general tag-up on major concerns	Identify new risks Assign responsibility Review Status staff risk reports Analyze assigned risks
Mission Integration Team Meetings	Action item reviews, coordination of technical, schedule, and budgetary and personnel resource issues	Identify new risks Assign responsibility Analyze assigned risks Review MIT status reports & track MIT level risks Update weekly/monthly charts as required for presentation of risk status Develop mitigation plans
Engineering Review Board	Specific engineering problem resolution	Identify new risks Assign responsibility Analyze Evaluate mitigation plans
Readiness Reviews	Review of all major topics prior to launch of a mission	Review all open/closed mission risks and plans (if not yet closed)
Risk Review	Review of all red risks, new risks, and others that may require management attention	Status, prioritize, downgrade, and close red risks, and others as required Determine method of obtaining resources from the Program (if required) Risk review will consist of a presentation, discussion, and decision/recommendation.
Quarterly Risk Review	Review all open risks	Status, prioritize, downgrade, and close risks Determine method of obtaining resources from the Program (if required)
Informal/ impromptu discussions, emails, meetings	Varies	Identify new risks Determine appropriate forum to assign responsibility

The results of forums are displayed on the Risk Bulletin Board. The Risk Bulletin Board was developed specifically to address ELV Launch Services Project Risks. The board displays current red risks and risk reports. The Risk Management Coordinator maintains the Risk Bulletin Board in the ELV building.

2.2.6.3 RISK MANAGEMENT DATABASE

The Risk Management Database is accessible by all individuals and teams within the ELV Launch Services Project, and by those who support through the matrixed organizations. It is populated primarily through the RIS, and it is used to generate the tracking summary spreadsheets and additional special request reports. The historical data is maintained in order to keep track of lessons learned and support trending activities. A Microsoft Access database will be used to collect risks and generate reports.

3.0 SUMMARY of ORGANIZATIONAL ROLES AND RESPONSIBILITIES

Who	Roles and Responsibilities
Individuals <ul style="list-style-type: none"> - Engineers - Mission Integration Managers - Launch Site Integration Managers - Branch Chiefs - Launch Service Managers - Project Manager - Procurement and Contracting Officers - Safety and Flight Assurance Specialists, Engineers and Managers - Program Analysts - Financial Analysts - Mission Integration Coordinators - Administrative Support - Division Chiefs 	<ul style="list-style-type: none"> • Identify risk issues and concerns • Complete initial Risk Information Sheet
MITs Organizational Branches/Divisions Engineering Review Board	<ul style="list-style-type: none"> • Assign/accept responsibility for risks • Estimate probability, impact, and timeframe • Classify risks • Recommend mitigation approach and actions. • Track risks and mitigation plans (acquire, compile, and report) • Prioritize risks • Integrate risk information within MITs and Vehicle Engineering Division • Ensure accuracy of probability, impact, timeframe, and classification • Review recommendations on mitigation approach and action • Report red and yellow risks to the Director for integration of overall Directorate/ELV Project level risks • Implement control decisions for risks • Collect and report general risk measures/metrics • Coordinate communications with the ELV Launch Services Director
Program Integration Division Chiefs Director, ELV Launch Services	<ul style="list-style-type: none"> • Integrate risk information across the ELV Project • Reprioritize all risks to determine the top ELV Project risks • Authorize expenditures for resources for mitigation • Make control decisions for the top ELV Project risks • Assign or change responsibility for risks and mitigation plans within ELV Project • Review general risk measures/metrics periodically to evaluate effectiveness of risk management.
Director, ELV Launch Services	<ul style="list-style-type: none"> • Coordinate communication with Sr. Mgmt and external customers, including NASA HQ and the ELV Program
Risk Management Coordinator	<ul style="list-style-type: none"> • Manage/coordinate risk process implementation and improvement • Lead reviews of the risk management database and risk status

	<ul style="list-style-type: none">• Track and control ELV Project risks• Develop and implement overall risk process measures
Safety and Flight Assurance	<ul style="list-style-type: none">• Ensure proper implementation of the ELV Project Risk Management Plan

APPENDIX

A.1 SAMPLE RISK INFORMATION SHEETS

A.2 FIELD DESCRIPTIONS

A.1 SAMPLE RISK INFORMATION SHEET - UNPOPULATED

ELV RISK INFORMATION SHEET

ID		Class (M,V,A)		Assigned to		Date	
Priority (R,Y,G)		Originator					
Probability (H,S,M,L)		Specific Vehicle					
Impact (H,M,L)		Specific Mission					
Timeframe: Start Date		End Date					
Risk Statement: Condition							
Risk Statement: Consequence							
Context							
Mitigation Strategy							
Mitigation Plan							
Status							
Closure Rationale							

Approval		Closing Date	
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A.1 SAMPLE RISK INFORMATION SHEET - POPULATED

ELV RISK INFORMATION SHEET

ID	M0065	Class (M,V,A)	M	Assigned to	Piloto, Armando	Date	10/26/2000
Priority (R,Y,G)	Y	Originator	Piloto, Armando				
Probability (H,S,M,L)	L	Specific Vehicle	Delta 7320-10C				
Impact (H,M,L)	H	Specific Mission	ICESAT/CATSAT				
Timeframe: Start Date		End Date	03/15/2001				
Risk Statement: Condition							
New lot of ordnance will be purchased for the ICESAT/CATSAT mission.							
Risk Statement: Consequence							
Failure of the DPAF LCCD Lot Acceptance Testing (LAT) could impact the launch date of the ICESAT/CATSAT mission.							
Context							
New lot of ordnance will be purchased for the ICESAT/CATSAT mission. LAT will be performed on the new lot as part of our acceptance criteria. LAT is currently scheduled to be completed in mid March, which gives us approximately nine months to recover from a potential test anomaly. Manufacturing a new lot of LCCD components could take up to a year.							
Mitigation Strategy							
1. Lessons learned from the previous LAT test to be incorporated into our test plan. 2. Environmental test levels will remain consistent with previous test. 3. Test configuration will not be significantly changed. 4. Use Aerospatiale in-process statistical control during manufacturing to ensure a consistent quality production. 5. Additional components from same lot have been ordered to primarily mitigate non-test-related anomalies.							
Mitigation Plan							
DPAF development team to work very closely with Boeing and Astrium to ensure our mitigation strategy is properly implemented.							
Status							
- LCCD Hardware Acceptance Review (HAR) scheduled for mid October. - Detonator LAT Test Readiness Review (TRR) also scheduled for mid October.							
Closure Rationale							

Approval		Closing Date	
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A.2 Field Descriptions

Field Name	Description
ID	Unique identifier automatically assigned to the risk when entered in the database
Date	Date the risk is officially submitted (XX = day, YYY = month, ZZZZ = year) (automatically assigned by database)
RiskStatement	Short description of the risk situation. Must be in the format of "condition: consequence."
Originator	Person who identified the risk
Class	A general classification of the identified risk used for sorting purposes – Administrative, Mission Specific, Vehicle, or other as required
Mission	Mission name associated with the risk, if applicable
Vehicle	Specific vehicle associated with the risk, if applicable
Assigned to	Designated person responsible for mitigating the risk
Timeframe	1) Date when risk mitigation must begin 2) Date when risk mitigation must be completed
Probability	The probability the risk will develop into a problem
Impact	The impact on the project if the risk develops into a problem
Risk Analysis Rating (R, Y, G)	Generated automatically by the risk database. Represents the overall level of the risk, as defined by probability and impact
Context	Additional information provided to clarify the condition and consequences in the risk statement.
Mitigation Strategy	The overall strategy for mitigating the risk.
Mitigation Plan	Outline of activities required to mitigate the risks, stated in numbered items. Includes success/closure criteria.
Status	Running status and dates of the mitigation actions and closures. Changes in responsibility are also captured.
Approval	Approval for mitigation strategies or closure.
Closing Date	Date the risk was closed.
Closing Rationale	Rationale for closure of the risk.